

ABSTRACT

Chemical grade silicon metalloid having improved performance in the direct process for making organohalosilanes is selected by (A) measuring the temperature of each batch of silicon metalloid during both the refining and the casting of the silicon metalloid; (B) measuring the elemental impurity levels in each batch of the silicon metalloid after refining of the silicon metalloid; (C) predicting the properties of the slag phase produced during refining of the silicon metalloid based on equilibrium calculations using the elemental impurity levels and the measured temperatures of each batch of silicon metalloid; and (D) selecting a chemical grade silicon metalloid for use in the direct process for making organohalosilanes based upon the predicted slag properties; such that the slag density, the viscosity, and the melting point of the slag, are within acceptable and predetermined ranges for each individual batch.